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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/705,447	11/03/2000	Miron Nicolae	2965/MIRON/US	7879
24964	7590	06/10/2005	EXAMINER	
GOODWIN PROCTER L.L.P 103 EISENHOWER PARKWAY ROSELAND, NJ 07068			LYONS, MICHAEL A	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/705,447

Applicant(s)

NICOLAE, MIRON

Examiner

Michael A. Lyons

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 March 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 42-133 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 55-64, 78-87, 101-110 and 124-133 is/are allowed.
- 6) ☒ Claim(s) 42-50, 52-54, 65-73, 75-77, 88-96, 98-100, 111-119 and 121-123 is/are rejected.
- 7) ☒ Claim(s) 51, 74, 97 and 120 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

In view of the Appeal Brief filed on March 14, 2005, PROSECUTION IS HEREBY REOPENED. Please see the new rejections set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

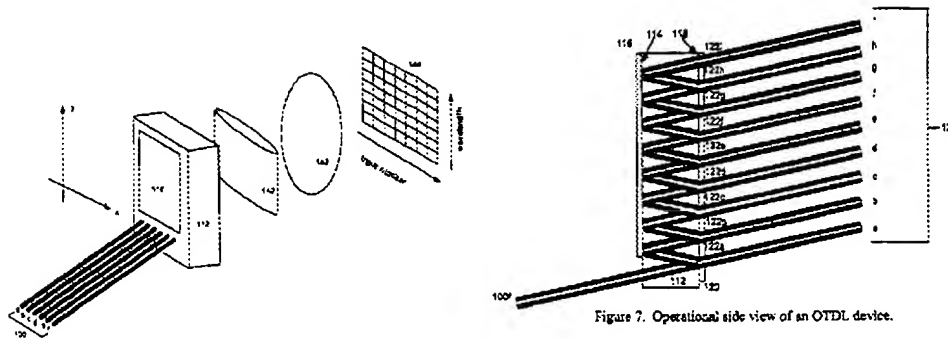
If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 42-44, 52-54, 65-67, 75-77, 88-90, 98-100, 111-113, and 121-123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turpin et al (6,608,721).**



Regarding claims 42 and 65, Turpin (Figs. 6 and 7) discloses an optical band pass device comprising a first substrate having an inner surface 114 and an outer surface 116, the inner surface having a very high reflection coefficient, a second substrate having an inner surface 118 and an outer surface 120, the inner surface having a reflection coefficient less than that of the inner surface of the first substrate in order to enable transmission of light through the substrate in conjunction with the transmission coefficient of the outer surface of the second substrate, the first and second substrates being parallel to each other, a light beam 100f (Fig. 7) that guides an input light beam into the device, the light reflecting off of and transmitting through the first and second substrates as shown in Figure 7 with no interference between the light beams between the substrates to that clean wavelengths can be picked off individually by the device, an optical medium 112 made of glass having a predetermined refractive index, and an optical converging element in the form of lens system 140 and 142.

Turpin, however, fails to disclose an explicit beam collimating element and the location of this element on the same side as the second substrate, so that the light enters and exits the device on the same side.

As for the collimating element, beam 100f is disclosed by Turpin to be a collimated light beam. Having a beam collimating element to produce this collimated light beam is implied;

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therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add an explicit beam collimator to the Turpin device, the motivation being to provide a clear element to generate the collimated light beam entering the device.

As for the arrangement of this collimating element on the same side of the device as the second substrate, it would have been obvious to one having ordinary skill in the art at the time the invention was made to shift the collimating element from adjacent to the first substrate to adjacent to the second substrate, since it has been held that the rearrangement of parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

Regarding claims 88 and 111, Turpin (Figs. 6 and 7) discloses an optical band pass device comprising a first substrate having an inner surface 114 and an outer surface 116, the inner surface having a very high reflection coefficient, a second substrate having an inner surface 118 and an outer surface 120, the inner surface having a reflection coefficient less than that of the inner surface of the first substrate in order to enable transmission of light through the substrate in conjunction with the transmission coefficient of the outer surface of the second substrate, the first and second substrates being parallel to each other, a light beam 100f (Fig. 7) that guides an input light beam into the device, this light beam entering the device through the first substrate, the light reflecting off of and transmitting through the first and second substrates as shown in Figure 7 with no interference between the light beams between the substrates so that clean wavelengths can be picked off individually by the device, an optical medium 112 made of glass having a predetermined refractive index, and an optical converging element in the form of lens system 140 and 142.

Turpin, however, fails to disclose an explicit beam collimating element.

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As for the collimating element, beam 100f is disclosed by Turpin to be a collimated light beam. Having a beam collimating element to produce this collimated light beam is implied; therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add an explicit beam collimator to the Turpin device, the motivation being to provide a clear element to generate the collimated light beam entering the device.

As for claims 43, 66, 89, and 112, Turpin discloses the use of an angled incident light beam 100f entering the etalon. A specific angle, however, is not disclosed. Setting the incidence angle of the incoming light to one degree would have been obvious to one of ordinary skill in the art at the time the invention was made, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As for claims 44, 67, 90, and 113, beam 100f is a collimated beam.

As for claims 52, 75, 98, and 121, lens system 140 and 142 is comprised of a cylindrical lens 140 and a spherical lens 142.

As for claims 53-54, 76-77, 99-100, and 122-123, “the optical system performs a Fourier transformation that converts a plane wave propagating at a given angle with respect to the optical axis into a focused optical spot on one of the output elements at the output surface. The output elements may be photodetectors, optical fibers, or any other optical element” (Col. 7, lines 61-67).

**Claims 45-50, 68-73, 91-96, and 114-119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Turpin et al (6,608,721) in view of Zochbauer (5,357,340).**

As for claims 45-50, 68-73, 91-96, and 114-119, Turpin discloses the claimed invention, but fails to disclose a means for adjusting a bandwidth of the delay line unit. Zochbauer, however, discloses control units S1 and S2 for adjusting the filters of the device. These units use either electric or thermal means to obtain a particular optical layer thickness, which, by extension, adjusts the spacing between the filter surfaces. Zochbauer further discloses, "Electro-optical, acousto-optical, thermo-optical and piezo-electric methods are used for tuning without using mechanically moving parts. In the case of electro-optical and acousto-optical methods, the index of refraction of the material between the mirrors is varied electro-optically and acousto-optically respectively. In the case of the thermo-optical method, the distance of the mirror (thickness of the material) as well as the index of refraction of that material is controlled through changes in temperature" (Col. 4, lines 25-34). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add control units to the filter of Turpin as per Zochbauer, the motivation being to provide a way to tune the filter so that the same filter may easily be used in more than one setting so that a variety of measurements may be quickly and efficiently made.

*Allowable Subject Matter*

**Claims 51, 74, 97, and 120 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.**

For reasoning, see below.

**Claims 55-64, 78-87, 101-110, and 124-133 are allowed in view of the prior art.**

The following is a statement of reasons for the indication of allowable subject matter:

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As for claims 55, 78, 101, and 124, the prior art of record, taken either alone or in combination, fails to disclose or render obvious a tunable optical band pass device, in combination with the rest of the limitations of the above claims.

Regarding the above claims, the arguments of record in the Appeal Brief filed March 14, 2005 lay out detailed reasoning for the allowability of the claims in view of the prior art. In particular, however, the prior art of record does disclose the individual parts of the invention, be it the substrates or the optical medium with a tunable refractive index. However, these individual elements or groups of elements cannot be obviously combined with one another to create the invention claimed in the instant application, particularly the use of a displacement transducer that measures the changes in the spacing between the inner surfaces of the substrates in conjunction with an adjustable spacer that physically adjusts this spacing, the transducer tied into a controller for monitoring the tunable operation of the interferometer via use of the input signal from the transducer, in combination with the rest of the limitations of the above claims.

### ***Response to Arguments***

Applicant's arguments with respect to the claims that have been newly rejected above have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lyons whose telephone number is 571-272-2420. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

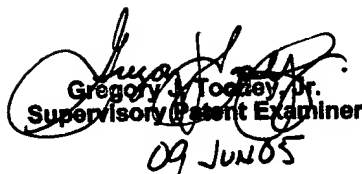


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAL

May 31, 2005

  
Gregory J. Tooley, Jr.  
Supervisory Patent Examiner  
09 JUN 05